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and receiving antenna **1** is being stored, an antenna guide **15** for guiding and storing the main body portion of the antenna **1**, an antenna stopper **16** which, when the transmitting and receiving antenna **1** is extended, prevents the antenna **1** from removing from the box body **3** as well as functions as an antenna, a spring **17** which is assembled to the antenna holder **12** for electrical connection with a land disposed on a printed circuit board (not shown) and also which has a contact in the leading end portion thereof, and clearance eliminating means **18** for eliminating a clearance (gap) between the leading end of the main body portion of the antenna **1** and the above-mentioned antenna guide **15**.

The clearance eliminating means **18** is composed of a plug portion for closing the rear end portion of the antenna guide **15** and an longitudinal rib which extends in parallel to the moving direction of the antenna stopper **16**, while the longitudinal rib includes a taper portion in the leading end portion thereof.

And, the clearance eliminating means **18** is formed separately from the antenna guide **15**; that is, the clearance eliminating means **18** is connected integrally with the antenna guide **15** in such a manner that the clearance eliminating means **18** is firstly inserted into the rear end portion of the antenna guide **15** and is then united integrally to the antenna guide **15** by ultrasonic welding, or by adhesion, or by pressure insertion.

However, alternatively, the clearance eliminating means **18** may also be formed integrally with the antenna guide **15**.

Next, description will be given below of an operation to hold the transmitting and receiving antenna **1** with reference to FIGS. **3** and **4**. FIG. **3** is a section view of an antenna hold device according to an embodiment of the invention, and FIG. **4** is a partially sectional view of the antenna hold device according to the embodiment of the invention, showing a state in which the transmitting and receiving antenna **1** is removed from the present antenna hold device.

In FIG. **4**, there is shown clearance eliminating means **42** which is disposed inside of the rear end portion of an antenna guide **43**. And, on the antenna main body side of the clearance eliminating means **42**, there is disposed a taper portion **44** which is used to facilitate the storage of the antenna **1**, in more particular, an antenna stopper **41**, while the antenna stopper **41** is held in a state in which it is separated from the clearance eliminating means **42**; and thus it can be understood that, in this stage, there exists a clearance (gap) between the antenna stopper **41** and antenna guide **43**.

Next, as the storage of the antenna **1** advances further from the state shown in FIG. **3**, an antenna stopper **33** passes through the taper portion **35** of clearance eliminating means **34** and is thereby stored in such a state where there has been eliminated the above-mentioned clearance between the antenna stopper **33** and antenna guide **36**. Therefore, there is obtained such a state as shown in FIG. **3**: that is, even if there is made a receiving call through vibrations, no vibration can be produced in the leading end of the main body portion of the antenna **1** and thus no strange sound (irregular sound) can be generated.

As described above, in the conventional portable radio phone, since there is present a clearance between the antenna stopper and antenna guide while the antenna thereof is being stored, the antenna is stored in a cantilevered manner. On the other hand, according to the invention, as in the illustrated embodiment thereof, due to provision of the clearance eliminating means, the antenna can be stored in such a manner that it is supported on both sides thereof, thereby

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being able to enhance the rigidity of the antenna, with the result that vibrations in the central portion of the antenna as well as in the neighborhood thereof can be reduced.

By the way, in FIG. **3**, an antenna element core line **32** forming the main body portion of the antenna is covered with a resin cover **31** and is also connected to the antenna stopper **33** which is formed of conductive metal.

As has been described hereinbefore, an antenna hold device according to the invention comprises a transmitting and receiving antenna which can be stored within the main body portion of the antenna hold device, and a cylindrical-shaped guide for guiding the main body portion storage side of the transmitting and receiving antenna; and, the present antenna hold device is characterized by clearance eliminating means which, when the transmitting and receiving antenna is guided to and stored in the main body portion storage side of the antenna hold device, eliminates a clearance between the above-mentioned guide and the leading end of the main body portion of the transmitting and receiving antenna. Thanks to this structure, there can be obtained an effect that, even when there arrives a receiving call through vibrations, no vibration can be produced in the leading end of the main body portion of the antenna and thus no strange sound (irregular sound) can be generated.

What is claimed is:

1. An antenna hold device for a radio phone, said radio phone having a main body portion, said antenna hold device comprising:

a transmitting and receiving antenna that is adapted to move between a storage position in which said antenna is stored within the main body portion of the radio phone and a use position wherein said antenna at least partially extends from said main body portion,

a cylindrical-shaped antenna guide for guiding said transmitting and receiving antenna between said storage and use positions, and

clearance eliminating means which, when said transmitting and receiving antenna is in said storage position, eliminates a clearance between a leading end of said transmitting and receiving antenna and said antenna guide and wherein the clearance between the leading end of the antenna and the antenna guide is restored when said antenna is moved away from said storage position and toward said use position.

2. The antenna hold device as in claim 1, wherein leading end of said clearance eliminating means includes a tapered portion to assist in guiding the leading end of said transmitting and receiving antenna to the desired location.

3. The antenna hold device as in claim 1, wherein said clearance eliminating means is disposed inside of a rear end portion of said antenna guide, and is structured such that a section shape thereof increases in thickness in a direction from said use position toward said storage position such that, when said transmitting and receiving antenna is in said storage position, said leading end of said antenna is in engagement with said clearance eliminating means and said antenna guide.

4. The antenna hold device as claimed in claim 1, wherein said leading end of the antenna includes a stopper that also serves to prevent said antenna from being completely removed from said antenna guide.

5. The antenna hold device as claimed in claim 4, wherein, when said antenna is in said storage position, said stopper simultaneously engages said antenna guide and said clearance eliminating means.